Section A.
Technical Notes

Scope of the Survey

Data for the National Science Foundation's (NSF's) fiscal year (FY) 1999 report on research and development (R&D) expenditures were collected from 597 institutions of higher education in the United States and Outlying Areas. These institutions have doctoral programs in science and engineering (S&E), are historically black colleges or universities (HBCUs) that expend any amount of separately budgeted R&D in S&E, or are master's or bachelor's degree-granting institutions that expend at least $150,000 in separately budgeted R&D in S&E.

In addition, the survey includes 17 federally funded research and development centers (FFRDCs). To qualify, an FFRDC must be engaged in basic or applied research, development, or management of R&D activities, and the results of these activities must be directly monitored by the Federal Government—usually a single agency—in a relationship expected to be maintained on a long-term basis. The center must be operated, managed, and administered by either a university or consortium of universities as an autonomous organization or as an identifiable separate operating unit of its parent institution. Finally, 70 percent or more of the center's financial support must be received from the Federal Government.

Although the same survey form (NSF Form 411) is used to collect data from both academic institutions and FFRDCs, the resulting data are presented separately in this report. The survey population was reviewed prior to mailing the questionnaires to ensure that each institutional classification was accurate. Characteristics of the schools were reviewed before and during the course of the survey to determine if changes had occurred (i.e., in highest degree granted or in terms of school openings, closings, or mergers).

FY 1999 Survey Frame Design

Starting with the FY 1998 survey, NSF has conducted a full population survey each year. NSF also has conducted a population review each year to ensure that all institutions that meet the inclusion criteria are, in fact, surveyed. This review is based on the survey frame design developed in FY 1998:

- Only S&E bachelor's and higher degree-granting institutions are surveyed.
- All S&E doctorate-granting institutions and all HBCUs are surveyed.
- All S&E master's and bachelor's degree-granting institutions that reported at least $150,000 in separately budgeted R&D expenditures in S&E in the previous fiscal year are surveyed. NSF contacted the master's and bachelor degree-granting institutions that were not in the FYs 1994 through 1998 academic R&D expenditures populations to determine if they met the $150,000 expenditure criteria. Institutions with a minimum of $150,000 were retained in the survey population. This represents a change from previous academic R&D expenditures surveys, which used a minimum of $50,000 as the eligibility threshold.

  In FY 1999, NSF conducted a population review using the above criteria. As a result of adding and deleting institutions from the survey population to comply with the inclusion criteria, the overall number of institutions surveyed increased from 556 in FY 1998 to 597 in FY 1999.

Survey Instrument

Most major R&D performers have incorporated into their record-keeping systems the data that are essential to complete this survey, thereby ensuring a consistent format from one year to the next. Such consistency yields the most useful statistics for time series. As a rule, information to complete this questionnaire is found within the institutions' year-end accounting records.

The survey questionnaire consists of four main items:

Item 1 is a request that institutions report their total current expenditures for separately budgeted science and engineering R&D for all activities specifically organized to produce research outcomes and commissioned by an agency either external to the institution or separately budgeted by an organizational unit, i.e., research centers, within the institution by source of funds. In addition, schools are asked to provide the percentage of the total and the percentage of the federally financed expenditures that are considered basic research. Included also are research funds for which an outside organization, educational or other, is a subrecipient. Care should be observed when interpreting data on source of funds; for example, industry R&D support is limited to grants and contracts for R&D activities from profit-making organizations. Total industry funds excludes research funded through unrestricted accounts and from corporate foundations, endowments, and fellowships to students; those funds would be included in

an institution's own funding totals. An increasing number of institutions have linkages with industry and foundations via subcontracts, thus complicating the identification of funding source. In addition, institutional policy may determine whether unrestricted state support is reported as state or as institutional funding.

Item 1A, added in FY 1996, is a request for total and federally financed current fund expenditures for separately budgeted science and engineering R&D passed through the institution to subrecipients[1]. Schools are asked to break out the subrecipient category by "educational" and "other."

Item 2 is a request for total and federally financed current fund expenditures for separately budgeted R&D activities by detailed S&E fields. Major fields remain unchanged from previous years. In the FY 1997 questionnaire, a subfield of bioengineering/biomedical engineering was added under Engineering. When interpreting these data at the detailed discipline level, users should keep in mind that there is considerable interdisciplinary and multidisciplinary activity.

Item 3 is a request for the portions of total and federally financed expenditures reported in items 1 and 2 that were used for the purchase of research equipment out of current funds. This portion includes all research equipment purchased under sponsored research project awards and disbursed in the same detailed disciplines as in item 2. These data are of special interest to Federal and institutional policy-makers in determining current funding levels for scientific research instrumentation.

ITEM 1A ANALYSIS

Because the responses to this item were not published in any of the Detailed Statistical Tables in FYs 1996 and 1997, the technical notes for these publications included summary tables. For FY 1999, as was done for FY 1998, in addition to the following summary and tables, NSF is including two ranking tables in the Section A tables based on item 1A data.

This item was completed by 87.5 percent of the respondents. The total R&D expenditures passed through to subrecipients, $1.3 billion, represented 5.7 percent of the item 1A respondents' total R&D expenditures and 4.6 percent of all separately budgeted R&D in FY 1999 (table 1). The doctorate-granting institutions reported a similar percentage of pass-through funds as the non-doctorate-granting institutions. Item 1A respondents from doctorate-granting institutions reported $1.2 billion, or 5.7 percent, of their total R&D expenditures were passed through to subrecipients, versus $17 million or 5.4 percent of item 1A non-doctorate-granting respondents. Item 1A respondents from private institutions reported a higher percentage (6.4 percent) of pass-through funds than those from public institutions (5.2 percent).

Table 1. FY 1999 item 1A summary of total academic R&D expenditures

[In thousands of dollars]

Degree and control	All respondents' total R&D[1]	Item 1A[2] respondents' total R&D	Total R&D expenditures passed to subrecipients		
			Educational	Other	Total[3]
All academic institutions	27,365,379	22,152,694	572,083	424,357	1,253,111
Doctorate	26,923,485	21,827,952	564,858	420,515	1,235,633
Non-doctorate	441,894	324,742	7,225	3,842	17,478
Public	18,514,284	13,950,668	372,745	264,626	730,652
Private	8,851,095	8,202,026	199,338	159,731	522,459

[1] This total is the amount reported by all respondents prior to imputation for non-respondents.

[2] This total is the amount reported by respondents who answered item 1A. Item 1A measures the amount of R&D expenditures passed through the to subrecipients.

[3] Detail may not sum to totals due to rounding and because some institutions provided only total and Federal R&D expenditure data passed subrecipients.

[1] Subrecipient means the entity that expends awards from a pass-through entity to carry out a program, but does not include an individual that is a beneficiary of such a program.

Respondents to this question reported $1 billion in Federal R&D funds passed through to subrecipients. This amount represented 7.9 percent of the Federal support reported by item 1A respondents and 6.4 percent of the $16 billion in total Federal support (table 2).

Table A-6 shows the total amount of R&D expenditures passed through to subrecipients for the 100 institutions reporting the highest amounts. Table A-7 shows the total amount of Federal R&D expenditures passed through to subrecipients for the 100 institutions reporting the highest amounts. Attendees at a June 1999 workshop in Boulder, CO, recommended publishing these data in this report. Respondents who provided item 1A data were contacted to obtain their concurrence with the publication of these data at the institutional level.

Response Rate

The FY 1999 survey questionnaires were mailed in November 1999. Respondents could choose to submit a paper questionnaire or to use a Web data collection system to respond to the survey. Every effort was made to maintain close contact with respondents in order to preserve both consistency and continuity in the resultant data. Questionnaires were carefully examined for completeness upon receipt. Computerized facsimiles of the survey data were then prepared for each institution, comparing the current and 2 prior years' data and noting any substantive disparities. A personalized e-mail message was sent to the respondents so that they could provide revisions before final processing and tabulation of the data. The e-mail message included a Web link to the academic R&D expenditures Web-based data collection system, allowing respondents to view and correct their data via the Web.

Respondents were asked to explain significant discrepancies between current and prior years' reporting patterns previously verified as correct (see Data Anomalies for more information). They were encouraged to correct prior years' data if anomalies were identified. When updated or amended figures covering past years were submitted, NSF correspondingly changed trend data. Similarly, if a respondent institution underwent an organizational change, such as a merger, NSF incorporated the effects of such changes into prior years' data.

By the survey closing date at the end of August 2000, forms had been received from 588 universities and colleges out of the academic population of 597, resulting in a 98-percent response rate. Responses were received from 99.4 percent of all doctorate-granting institutions, where 98.4 percent of the estimated national R&D expenditures in S&E fields was disbursed. Also, forms were received from all of the 17 FFRDCs. Table A-1 displays a detailed breakdown of the response rates by highest degree granted.

As in FY 1998, Oregon Health Sciences University did not respond to the survey in FY 1999. This institution was among the first 100 universities and colleges

Table 2. FY 1999 item 1A summary of Federal academic R&D expenditures

[In thousands of dollars]

Degree and control	All respondents' Federal R&D[1]	Item 1A[2] respondents' Federal R&D	Federal R&D expenditures passed to subrecipients		
			Educational	Other	Total[3]
All academic institutions	15,965,069	12,986,506	501,638	317,297	1,027,029
Doctorate	15,706,289	12,776,257	494,777	313,678	1,011,507
Non-doctorate	258,780	210,249	6,861	3,619	15,522
Public	9,590,068	7,113,589	321,004	216,433	612,026
Private	6,375,001	5,872,917	180,634	100,864	415,003

[1] This total is the amount reported by all respondents prior to imputation for non-respondents.

[2] This total is the amount reported by respondents who answered item 1A. Item 1A measures the amount of R&D expenditures passed through the institution to subrecipients.

[3] Detail may not sum to totals due to rounding and because some institutions provided only total and Federal R&D expenditure data passed through to subrecipients.

ranked by total R&D expenditures in FY 1997, and users should be aware that both the FY 1998 and the FY 1999 data for this institution were imputed.

National Total and Imputation

To provide a national estimate for all universities and colleges performing R&D in FY 1999, it was necessary to implement two statistical procedures. First, data were estimated by "imputation" for the nine institutions that had not responded by the closing date of the survey, using imputation techniques that have been used consistently since FY 1976. Second, data were also imputed for universities and colleges that submitted only partial responses. The imputed total was $124 million, or 0.4 percent of the $27.5 billion total R&D expenditures, as shown in Table A-2.

Tables A-3a and A-3b present breakdowns of the total and Federal imputed amounts by S&E fields. The dollar amount imputed is displayed along with the percentage it represents of the national estimate for universities and colleges in a particular field. The amount imputed is similarly broken down by source of funds in table A-4.

A number of surveyed institutions have responded only intermittently in past years, providing data one year, not responding for one or more subsequent years, and then providing data again. For the years in which no response was received, data have been imputed as previously described. Although the imputation algorithm accurately reflects national trends, it cannot account for specific trends at individual institutions. For this reason a separate backcasting of prior years' data was performed, following current-year imputation.

For each institution, formerly imputed key variables for items 1 to 3 were recomputed to ensure that the imputed data accurately represent the growth patterns shown by reported data. If data were reported for fiscal years 1996 and 1999 but not for the intervening years, for example, the difference between the reported figures for each item total was calculated and evenly distributed across the intervening years (1997–1998). The new figures were spread across disciplines (items 2 and 3) or sources of support (item 1) on the basis of the most recent reporting pattern. A clean facsimile was generated for each of the institutions undergoing these procedures and returned to the school for comment. These procedures result in much more consistent reporting trends for individual institutions but have little effect upon aggregate figures reflecting national totals.

Data Anomalies

Aggregate academic expenditure data are generally consistent from year to year, although data for individual institutions may vary considerably. Data anomalies may reflect true increases or decreases in expenditures or may be the result of changes in reporting methodology.

State Tables

The Detailed Statistical Tables showing R&D expenditures at individual doctorate-granting institutions by state provide detailed campus listings for the University of Tennessee, the University of Colorado, and Louisiana State University in FY 1999. FY 1999 was the first year that Louisiana State University data were presented in this way.

Highest-Degree-Granted Tables

Several longitudinal tables display data for institutions whose highest S&E degree granted is at the doctoral level. In tables produced prior to FY 1992, it would have been difficult to identify whether changes in yearly R&D expenditures were caused by changes in expenditure levels or in the number of doctorate-granting institutions. In order to maintain a consistent group of institutions across all years, the highest-degree-granted status for each institution is based on the highest degree granted in the most recent year, FY 1999.

Data Availability

Data published in this report are also available in machine-readable form on the World Wide Web. Single-year or multi-year data files are available with data for FYs 1975 through 1999.

Information on file formats and the years for which they are available can be found on the World Wide Web at this URL: *http://www.nsf.gov/sbe/srs/rdexp99/rdpub99/99pubuse.htm.*

Selected data items for institutions are available on the World Wide Web at *http://www.nsf.gov/sbe/ srs/profiles/start.htm.* The institutional profiles cover data from this survey as well as data collected in NSF's other

academic S&E surveys: the Survey of Graduate Students and Postdoctorates in Science and Engineering (graduate student survey) and the Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions (Federal S&E support survey). The profiles are also linked to the corresponding ranking table of each survey.

Institutional researchers can obtain data from several academic S&E resources through the Web-Based Computer-Aided Science Policy Analysis and Research (WebCASPAR) database system, which is an easy-to-use tool for the retrieval and analysis of statistical data on academic S&E resources. WebCASPAR provides an extensive and growing data library with multi-year statistics on the state of higher education in general and on academic S&E resources specifically. This data library is based on a set of standard institutional and field-of-science definitions across the multiple sources used to develop the database. The WebCASPAR program includes built-in help capabilities to facilitate the use and interpretation of the data.

The latest version of WebCASPAR can now be accessed via the Web at *http://caspar.nsf.gov/webcaspar.*

WebCASPAR data are drawn from a number of sources. All data are available for individual institutions, by state, and at the national level. Longitudinal data from surveys of universities and colleges conducted by the NSF Division of Science Resources Studies include the academic R&D expenditures survey, the Federal S&E support survey, and the graduate student survey. Data from the surveys of universities and colleges conducted by the National Center for Education Statistics include earned degrees, opening fall enrollment, tuition, faculty salaries, tenure and fringe benefits, and financial statistics.

SECTION A.
TABLES

SECTION A. TABLES

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Table A-1. Response rates for the academic research and development expenditures survey, by respondent type and highest degree granted: fiscal year 1999

Respondent type and highest degree granted	Number in survey universe	Number of complete responses	Number of partial responses	Total number of responses	Response rate
Total	614	491	114	605	98.5
Universities and colleges	597	474	114	588	98.5
Doctorate	359	289	68	357	99.4
Master's	148	116	29	145	98.0
Bachelor's	90	69	17	86	95.6
Academically-administered FFRDCs	17	17	0	17	100.0

SOURCE: National Science Foundation/Division of Science Resources Studies, Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 1999

Table A-2. Imputed amounts for total research and development expenditures at universities and colleges, by highest degree granted: fiscal year 1999

[Dollars in millions]

Highest degree granted	Total separately budgeted R&D expenditures	Imputed amount	Imputed amount as percent of total
Total	27,489	124	0.4
Doctorate granting institutions	27,038	115	0.4
Non-doctorate granting institutions	451	9	2.0

NOTE: Because of rounding, detail may not add to totals.

SOURCE: National Science Foundation/Division of Science Resources Studies, Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 1999

Table A-3a. Imputed amounts for total research and development expenditures at universities and colleges, by science and engineering field: fiscal year 1999

[Dollars in millions]

Science and engineering field	Total separately budgeted R&D expenditures	Imputed amount	Imputed amount as percent of total
Total	27,489	124	0.4
Engineering	4,257	66	1.5
Aeronautical and astronautical	260	46	17.5
Bioengineering/biomedical	137	7	5.4
Chemical	350	10	3.0
Civil	529	15	2.8
Electrical	1,020	81	7.9
Mechanical	625	60	9.6
Metallurgical and materials	385	2	0.6
Other, n.e.c.	951	98	10.3
Physical sciences	2,600	39	1.5
Astronomy	389	12	3.0
Chemistry	915	27	3.0
Physics	1,142	29	2.5
Other, n.e.c.	153	3	2.3
Environmental sciences	1,690	26	1.5
Atmospheric	288	20	6.9
Earth sciences	544	49	9.1
Oceanography	602	40	6.6
Other, n.e.c.	256	40	15.7
Mathematical sciences	313	6	2.0
Computer sciences	860	11	1.2
Life sciences	15,591	156	1.0
Agricultural sciences	2,031	18	0.9
Biological sciences	5,013	50	1.0
Medical sciences	7,991	77	1.0
Other, n.e.c.	557	11	2.0
Psychology	465	9	1.9
Social sciences	1,262	22	1.8
Economics	270	3	1.3
Political science	201	3	1.2
Sociology	270	12	4.6
Other, n.e.c.	521	12	2.3
Other sciences, n.e.c.	452	13	2.8

NOTES: The imputation rate at the total level is lower than the imputation rates at the S&E field levels because many institutions could provide totals but not the S&E field details.

Because of rounding, detail may not add to totals.

KEY: n.e.c. = not elsewhere classified

SOURCE: National Science Foundation/Division of Science Resources Studies, Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 1999

Table A-3b. Imputed amounts for federally financed research and development expenditures at universities and colleges, by science and engineering field: fiscal year 1999

[Dollars in millions]

Science and engineering field	Total separately budgeted R&D expenditures	Imputed amount	Imputed amount as percent of total
Total	16,047	82	0.5
Engineering	2,438	33	1.4
Aeronautical and astronautical	183	35	19.0
Bioengineering/biomedical	72	6	7.9
Chemical	179	8	4.6
Civil	216	8	3.9
Electrical	652	77	11.9
Mechanical	388	54	13.9
Metallurgical and materials	218	2	0.9
Other, n.e.c.	530	84	15.8
Physical sciences	1,860	24	1.3
Astronomy	277	6	2.1
Chemistry	615	16	2.6
Physics	862	18	2.1
Other, n.e.c.	105	1	0.7
Environmental sciences	1,101	15	1.4
Atmospheric	222	19	8.5
Earth sciences	320	39	12.3
Oceanography	404	34	8.4
Other, n.e.c.	154	33	21.1
Mathematical sciences	209	4	1.8
Computer sciences	582	7	1.2
Life sciences	8,920	91	1.0
Agricultural sciences	546	4	0.8
Biological sciences	3,203	32	1.0
Medical sciences	4,848	46	0.9
Other, n.e.c.	323	9	2.8
Psychology	310	7	2.1
Social sciences	472	9	1.8
Economics	90	3	3.2
Political science	54	1	2.1
Sociology	119	7	5.6
Other, n.e.c.	209	3	1.5
Other sciences, n.e.c.	154	6	4.1

NOTES: The imputation rate at the total level is lower than the imputation rates at the S&E field levels because many institutions could provide totals but not the S&E field details.

Because of rounding, detail may not add to totals.

KEY: n.e.c = not elsewhere classified

SOURCE: National Science Foundation/Division of Science Resources Studies, Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 1999

Table A-4. Imputed amounts for research and development expenditures at universities and colleges, by source of funds: fiscal year 1999

[Dollars in millions]

Source of funds	Total separately budgeted R&D expenditures	Imputed amount	Imputed amount as percent of total
Total	27,489	124	0.4
Federal Government	16,047	82	0.5
State and local government	2,028	17	0.8
Industry	2,048	16	0.8
Institutional funds	5,366	30	0.6
All other sources	2,000	26	1.3

NOTE: Because of rounding, detail may not add to totals.

SOURCE: National Science Foundation/Division of Science Resources Studies, Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 1999

Table A-5. Number of surveyed institutions for the academic research and development expenditures survey, by respondent type and highest degree granted: fiscal years 1994-1999

Respondent type and highest degree granted	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
Total	517	517	511	511	572	614
Universities and colleges	499	499	493	493	555	597
Doctorate	348	348	343	343	357	359
Master's	84	84	84	84	118	148
Bachelor's	67	67	66	66	80	90
Academically-administered FFRDCs	18	18	18	18	17	17

SOURCE: National Science Foundation/Division of Science Resources Studies, Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 1999

Table A-6. Total amount of R&D expenditures passed through to subrecipients by universities and colleges, ranked by amount passed through: fiscal year 1999

[Dollars in thousands]

Institutions ranked by total amount of R&D expenditures passed through [1]	Total R&D expenditures	Total R&D expenditures passed through	Amounts passed through	
			Educational subrecipients	Other subrecipients
Total, all institutions	27,489,061	1,253,111	572,083	424,357
1 Stanford University	426,549	59,251	--	--
2 University of Colorado	318,618	56,008e	12,772e	43,236e
3 Duke University	348,274	55,416	15,668	39,748
4 Harvard University	326,193	35,200	--	--
5 University of Arizona	320,245	29,630	16,297	13,333
6 MA Institute of Tech	420,306	27,961	8,063	19,898
7 U of Nebraska at Lincoln	131,046	27,498	18,965	8,533
8 Cornell University	395,552	27,395	--	--
9 U of Southern California	280,741	27,074	12,024	15,050
10 Columbia U in City of NY	279,587	25,654	11,822	13,832
Total, 1st 10 institutions	3,247,111	371,087	95,611	153,630
11 U of Illinois Urbana-Cham	358,247	22,601	20,647	1,954
12 U of Pennsylvania	383,569	21,146	11,907	9,239
13 Pennsylvania State U	379,402	18,910	7,961	10,949
14 Georgetown University	111,426	18,070	10,218	7,852
15 U of NC Chapel Hill	252,767	17,094	8,101	8,993
16 U WI-Madison	462,725	16,860	8,427	8,433
17 U TX at Austin	258,122	16,715	11,366	5,349
18 UT Houston Hlth Sci Ctr	105,307	16,602	7,366	9,236
19 Ohio State University	322,810	15,971	9,729	6,242
20 Northwestern University	233,809	15,587	--	--
Total, 1st 20 institutions	6,115,295	550,643	191,333	221,877
21 University of Pittsburgh	249,477	15,228	8,223	7,005
22 Yale University	274,050	15,194	--	--
23 NC State University	270,621	15,123	8,246	6,877
24 U of Alabama Birmingham	232,115	14,660	--	--
25 Arizona State University	107,184	13,002	1,956	11,046
26 Georgia Institute of Tech	263,725	12,747	--	--
27 U of South Florida	123,961	11,789	--	--
28 Purdue University	226,411	11,690	8,794	2,896
29 Baylor Col of Medicine	272,198	11,502	11,502	0
30 Texas A&M University	402,203	11,121	8,114	3,007
Total, 1st 30 institutions	8,537,240	682,699	238,168	252,708
31 George Washington U	66,757	10,934	10,934	0
32 Rutgers the State U NJ	213,838	10,798	7,801	2,997
33 Oregon State University	139,285	10,767	8,117	2,650
34 University of Florida	304,447	9,654	8,689	965
35 New Mexico State Univ	79,877	9,640	2,530	7,110
36 University of Miami	139,608	8,779	4,611	4,168
37 Florida State University	97,673	8,685	2,079	6,606
38 University of Chicago	162,805	8,486	6,529	1,957
39 Indiana University	194,790	8,408	4,872	3,536
40 Wake Forest University	82,827	8,362	--	--
Total, 1st 40 institutions	10,019,147	777,212	294,330	282,697

See explanatory information and SOURCE at end of table.

Table A-6. Total amount of R&D expenditures passed through to subrecipients by universities and colleges, ranked by amount passed through: fiscal year 1999

[Dollars in thousands]

Institutions ranked by total amount of R&D expenditures passed through [1]	Total R&D expenditures	Total R&D expenditures passed through	Amounts passed through	
			Educational subrecipients	Other subrecipients
41 University of Rochester	177,126	8,007	5,598	2,409
42 Washington University	315,606	7,995	5,215	2,780
43 University of Utah	153,843	7,831	4,132	3,699
44 Louisiana State U System	225,808	7,606	3,002	4,604
45 U of Iowa	207,135	7,356	--	--
46 Brandeis University	48,305	7,292	1,715	5,577
47 University of New Mexico	115,850	7,044	6,147	897
48 Emory University	189,170	6,993	4,384	2,609
49 University of Georgia	237,493	6,910	--	--
50 University of Kentucky	174,034	6,853	6,853	0
Total, 1st 50 institutions	11,863,517	851,099	331,376	305,272
51 Tulane University	87,324	6,785	6,175	610
52 Michigan State University	207,912	6,773	5,154	1,619
53 SUNY at Stony Brook	148,982	6,606	--	--
54 University of IL Chicago	175,093	6,597	3,860	2,737
55 Vanderbilt University	149,675	6,488	3,315	3,173
56 SUNY Hlth Sci Ctr Brklyn	28,840	6,442	6,120	322
57 CUNY City College	13,452	6,411	--	--
58 New York University	167,179	6,388	3,979	2,409
59 Eastern VA Med School	24,096	6,216	2,339	3,877
60 Montana St U Bozeman	55,475	6,100	5,000	1,100
Total, 1st 60 institutions	12,921,545	915,905	367,318	321,119
61 University of Kansas	132,752	6,053	4,371	1,682
62 VA Polytech Inst & St U	169,250	6,030	2,802	3,228
63 Florida International U	25,061	5,940	--	--
64 Howard University	23,557	5,862	4,007	1,855
65 Princeton University	124,237	5,860	3,837	2,023
66 Wayne State University	146,832	5,817	1,969	3,848
67 University of Cincinnati	153,002	5,771	2,663	3,108
68 Yeshiva University	111,771	5,600	5,600	0
69 Boston University	141,102	5,455	2,727	2,728
70 Mississippi State U	110,896	5,402	4,987	415
Total, 1st 70 institutions	14,060,005	973,695	400,281	340,006
71 U of Maine	41,452	5,369	3,127	2,242
72 U of South Carolina	105,835	5,282	3,682	1,600
73 University of Virginia	157,487	5,263	3,309	1,954
74 Mt Sinai Sch Med	127,765	5,025	5,025	0
75 SUNY at Buffalo	166,823	4,807	3,399	1,408
76 U of New Hampshire	57,613	4,785	--	--
77 U of Alabama Huntsville	40,203	4,683	1,623	3,060
78 West Virginia University	63,392	4,660	3,124	1,536
79 University of Oklahoma	142,085	4,610	2,677	1,933
80 University of Dayton	36,937	4,545	1,511	3,034
Total, 1st 80 institutions	14,999,597	1,022,724	427,758	356,773

See explanatory information and SOURCE at end of table.

Table A-6. Total amount of R&D expenditures passed through to subrecipients by universities and colleges, ranked by amount passed through: fiscal year 1999

[Dollars in thousands]

Institutions ranked by total amount of R&D expenditures passed through [1]	Total R&D expenditures	Total R&D expenditures passed through	Amounts passed through	
			Educational subrecipients	Other subrecipients
81 Washington State U	96,943	4,486	3,334	1,152
82 U of Alaska Fairbanks	88,825	4,444	--	--
83 U TX at El Paso	21,961	4,397	3,448	949
84 Rice University	41,069	4,376	4,052	324
85 U of Rhode Island	44,452	4,254	2,978	1,276
86 University of Vermont	64,049	4,215	1,594	2,621
87 U MA Worcester	83,040	4,133	4,133	0
88 University of Connecticut	134,986	3,936	2,535	1,401
89 Oklahoma State University	83,108	3,932	--	--
90 Dartmouth College	69,522	3,919	3,055	864
Total, 1st 90 institutions	15,727,552	1,064,816	452,887	365,360
91 Drexel University	22,397	3,682	2,573	1,109
92 U Med & Dent of NJ	126,277	3,629	--	--
93 Temple University	66,777	3,617	3,617	0
94 U TX MD Anderson Cncr Ctr	155,126	3,594	1,818	1,776
95 University of Louisville	57,051	3,533	2,120	1,413
96 U MD Biotechnology Inst	31,172	3,520	3,367	153
97 U TX San An Hlth Sci Ctr	87,804	3,506	732	2,774
98 University of Alabama,The	28,909	3,477	3,451	26
99 Brown University	76,330	3,430	2,183	1,247
100 U of Nevada Las Vegas	20,170	3,429	2,729	700
Total, 1st 100 institutions	16,399,565	1,100,233	475,477	374,558
Total, all other sampled institutions	11,089,496	152,878	96,606	49,799

[1] Only the top 100 institutions that reported the largest amount of passed through funds are shown in this table.

NOTE: Because of rounding, detail may not add to totals.

KEY: -- = not available
e = estimated

SOURCE: National Science Foundation/Division of Science Resources Studies, Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 1999

Table A-7. Total amount of Federal R&D expenditures passed through to subrecipients by universities and colleges, ranked by amount passed through: fiscal year 1999

[Dollars in thousands]

Institutions ranked by total amount of R&D Federal expenditures passed through [1]	Federal R&D expenditures	Federal R&D expenditures passed through	Federal amounts passed through	
			Educational subrecipients	Other subrecipients
Total, all institutions	16,046,797	1,027,029	501,638	317,297
1 Stanford University	353,947	58,550	--	--
2 University of Colorado	244,686	43,712e	11,573e	32,139e
3 Harvard University	266,019	31,370	--	--
4 University of Arizona	178,126	25,509	14,030	11,479
5 U of Southern California	199,619	25,301	11,511	13,790
6 Columbia U in City of NY	240,158	25,165	11,639	13,526
7 MA Institute of Tech	308,921	22,965	6,741	16,224
8 U of Nebraska at Lincoln	36,977	22,769	14,764	8,005
9 U of Illinois Urbana-Cham	185,767	20,192	18,239	1,953
10 U of Pennsylvania	279,013	18,836	11,227	7,609
Total, 1st 10 institutions	2,293,233	294,369	99,724	104,725
11 Pennsylvania State U	199,105	17,664	7,352	10,312
12 U of NC Chapel Hill	182,935	17,094	8,101	8,993
13 Georgetown University	83,972	17,052	10,218	6,834
14 UT Houston Hlth Sci Ctr	71,288	15,673	6,635	9,038
15 U WI-Madison	249,961	15,300	7,746	7,554
16 Duke University	186,757	14,727	14,727	0
17 University of Pittsburgh	194,618	13,214	6,739	6,475
18 U of Alabama Birmingham	165,223	13,208	--	--
19 U TX at Austin	164,913	13,173	9,353	3,820
20 Ohio State University	135,216	13,141	8,445	4,696
Total, 1st 20 institutions	3,927,221	444,615	179,040	162,447
21 Yale University	213,404	12,727	--	--
22 Arizona State University	53,905	12,609	1,918	10,691
23 Northwestern University	132,647	11,884	--	--
24 Cornell University	234,792	11,632	--	--
25 Baylor Col of Medicine	141,111	11,102	11,102	0
26 U of South Florida	42,005	10,274	--	--
27 New Mexico State Univ	56,875	9,456	2,432	7,024
28 NC State University	66,310	9,369	4,904	4,465
29 Purdue University	95,708	9,355	8,093	1,262
30 Rutgers the State U NJ	75,664	8,445	6,539	1,906
Total, 1st 30 institutions	5,039,642	551,468	214,028	187,795
31 University of Florida	122,296	7,791	7,012	779
32 University of Chicago	135,720	7,751	6,031	1,720
33 Indiana University	102,262	7,721	4,243	3,478
34 Washington University	218,598	7,554	5,118	2,436
35 Florida State University	55,666	7,528	2,018	5,510
36 Oregon State University	81,649	7,435	4,901	2,534
37 University of Utah	111,716	7,390	4,092	3,298
38 Texas A&M University	149,151	7,212	6,537	675
39 U of Iowa	122,638	7,091	--	--
40 University of New Mexico	84,976	6,922	6,025	897
Total, 1st 40 institutions	6,224,314	625,863	260,005	209,122

See explanatory information and SOURCE at end of table.

Table A-7. Total amount of Federal R&D expenditures passed through to subrecipients by universities and colleges, ranked by amount passed through: fiscal year 1999

[Dollars in thousands]

Institutions ranked by total amount of R&D Federal expenditures passed through [1]	Federal R&D expenditures	Federal R&D expenditures passed through	Federal amounts passed through	
			Educational subrecipients	Other subrecipients
41 George Washington U	49,944	6,888	6,888	0
42 University of Rochester	132,852	6,781	5,164	1,617
43 Tulane University	50,779	6,585	6,065	520
44 Emory University	132,816	6,509	4,012	2,497
45 SUNY at Stony Brook	93,937	6,319	--	--
46 Louisiana State U System	75,831	6,275	2,528	3,747
47 SUNY Hlth Sci Ctr Brklyn	21,053	6,198	5,888	310
48 New York University	111,124	6,142	3,979	2,163
49 University of Miami	101,883	6,141	3,905	2,236
50 Michigan State University	89,835	6,081	4,847	1,234
Total, 1st 50 institutions	7,084,368	689,782	303,281	223,446
51 Brandeis University	29,423	5,947	1,217	4,730
52 Florida International U	15,757	5,940	--	--
53 University of Georgia	56,080	5,885	--	--
54 Wake Forest University	60,293	5,885	--	--
55 Howard University	21,658	5,754	4,007	1,747
56 University of Cincinnati	100,325	5,696	2,588	3,108
57 Yeshiva University	89,680	5,600	5,600	0
58 Georgia Institute of Tech	112,861	5,456	--	--
59 VA Polytech Inst & St U	75,386	5,427	2,666	2,761
60 U of Maine	19,163	5,369	3,127	2,242
Total, 1st 60 institutions	7,664,994	746,741	322,486	238,034
61 Boston University	123,390	5,282	2,641	2,641
62 University of Kentucky	66,184	5,174	5,174	0
63 CUNY City College	9,992	5,042	--	--
64 Mt Sinai Sch Med	84,624	5,025	5,025	0
65 Mississippi State U	46,528	4,959	4,710	249
66 Vanderbilt University	116,887	4,931	3,084	1,847
67 University of Virginia	108,495	4,669	2,938	1,731
68 U of Alabama Huntsville	25,166	4,610	1,613	2,997
69 Princeton University	72,974	4,574	3,131	1,443
70 SUNY at Buffalo	85,490	4,569	3,224	1,345
Total, 1st 70 institutions	8,404,724	795,576	354,026	250,287
71 University of Dayton	30,755	4,534	1,507	3,027
72 University of IL Chicago	86,406	4,464	3,348	1,116
73 University of Kansas	57,272	4,413	3,269	1,144
74 Montana St U Bozeman	26,231	4,300	3,500	800
75 Rice University	35,012	4,269	3,945	324
76 U of New Hampshire	30,586	4,254	--	--
77 U of South Carolina	48,490	4,220	2,620	1,600
78 U MA Worcester	55,516	4,133	4,133	0
79 West Virginia University	26,264	4,004	3,119	885
80 U TX at El Paso	18,292	3,871	3,447	424
Total, 1st 80 institutions	8,819,548	838,038	382,914	259,607

See explanatory information and SOURCE at end of table.

Table A-7. Total amount of Federal R&D expenditures passed through to subrecipients by universities and colleges, ranked by amount passed through: fiscal year 1999

[Dollars in thousands]

Institutions ranked by total amount of R&D Federal expenditures passed through [1]	Federal R&D expenditures	Federal R&D expenditures passed through	Federal amounts passed through	
			Educational subrecipients	Other subrecipients
81 Eastern VA Med School	11,354	3,700	1,591	2,109
82 U Med & Dent of NJ	61,730	3,629	--	--
83 U TX MD Anderson Cncr Ctr	69,413	3,594	1,818	1,776
84 Washington State U	44,610	3,566	2,696	870
85 U of Alaska Fairbanks	34,647	3,538	--	--
86 U MD Biotechnology Inst	13,911	3,520	3,367	153
87 U TX San An Hlth Sci Ctr	56,904	3,506	732	2,774
88 U of Nevada Las Vegas	10,248	3,429	2,729	700
89 University of Alabama,The	17,601	3,381	3,355	26
90 University of Vermont	36,085	3,359	1,174	2,185
Total, 1st 90 institutions	9,176,051	873,260	400,376	270,200
91 Temple University	29,734	3,245	3,245	0
92 Wayne State University	57,610	3,227	1,353	1,874
93 U of Rhode Island	36,207	3,173	2,311	862
94 Dartmouth College	46,741	3,163	2,824	339
95 Thomas Jefferson U	56,369	3,141	2,887	254
96 Brown University	45,276	3,078	2,042	1,036
97 University of Connecticut	55,496	3,040	2,100	940
98 Desert Research Institute	16,552	2,951	2,010	941
99 Colorado State University	91,943	2,828	2,404	424
100 U of Nevada Reno	24,587	2,650	2,251	399
Total, 1st 100 institutions	9,636,566	903,756	423,803	277,269
Total, all other sampled institutions	6,410,231	123,273	77,835	40,028

[1] Only the top 100 institutions that reported the largest amount of passed through funds are shown in this table.

NOTE: Because of rounding, detail may not add to totals.

KEY: -- = not available
e = estimated

SOURCE: National Science Foundation/Division of Science Resources Studies, Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 1999